



**SIRTF**

# Space InfraRed Telescope Facility (*SIRTF*)

## Release Notes

SPOT  
SIRTF Planning Observations Tool v3.5

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**JPL**

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## 1 Introduction

Welcome to SPOT – the SIRTf Planning Observations Tool. Version 3.5 is the first release of the software to the astronomical community. In these release notes we provide information about the computing requirements needed to run SPOT, along with a list of known bugs and issues. A regularly updated bugs and issues list is kept on the Proposal Kit page at the SSC web site (<http://sirtf.caltech.edu>) from which you downloaded the software. Download the SPOT User's Guide from the Proposal Kit web page for complete documentation about how to use the SPOT software. Please email us at the SIRTf Help Desk at [sirtf@ipac.caltech.edu](mailto:sirtf@ipac.caltech.edu) with any questions or comments.

To make using SPOT and planning your SIRTf observations easier we recommend that you:

1. *Read the relevant sections of the SIRTf Observer's Manual to decide how best to implement the science you want to do.*
2. *Read these release notes and the SPOT User's Guide.*
3. *Check the Proposal Kit web page for additional information in helping you plan your observations.*
4. *Save your AORs often. SPOT does not save your work to disk automatically. Given the variety of operating systems we support, we cannot guarantee that the software won't crash. Saving your work will make these events much less painful.*

## **2 Minimum Recommended Hardware Configuration**

SPOT is written in the JAVA language and therefore requires lots of memory and a fast processor in your computer. The minimum recommended hardware configurations are:

### **2.1 *Sun WORKSTATIONS: Sun Ultra 1 with 64 MB RAM***

128 MB of RAM is optimal. The software may perform acceptably with a Sparc 20 with 64 MB RAM. SPOT will not run acceptably on Sparc 1, 2, 5, or 10 workstations.

### **2.2 *WINDOWS PC: Pentium 2 processor with 64 MB RAM***

128 MB of RAM is optimal. The software has been tested on a Windows 95 laptop with a Pentium processor and 64 MB of RAM and does run acceptably.

### **2.3 *LINUX PC: Pentium 2 processor with 64 MB RAM***

We have done limited testing on a Linux system running with a Pentium processor and 128 MB of RAM. We expect it should also run with 64 MB RAM.

### 3 Operating System Configurations Supported

The majority of the testing for this version of SPOT has been done under Solaris 2.6 and Windows 95. We do not anticipate major problems with later versions of Solaris and/or other flavors of Windows. Minimal testing has been done under Linux.

#### 3.1 *UNIX: Solaris 2.6+*

The software has been tested on Solaris 2.6. It should run as well on later versions of Solaris. Suggested patches for Solaris to better support JAVA are listed on the SIRTF web site where you download the SPOT software.

#### 3.2 *WINDOWS: 95, 98, NT*

The functionality of the software has been tested using Windows 95. We have also tested that the software installs and runs under Windows 98 and Windows NT but minimal functional testing has been done on these platforms.

##### 3.2.1 Windows 2000

We have installed SPOT successfully on a Windows 2000 platform and it does run. We did encounter a problem during the installation but it did not prevent the software from running. A message appeared stating "UnInstaller failed to initialize. You may not be able to uninstall." Our version of Install Shield was purchased before Windows 2000 was released.

##### 3.2.2 Non-standard Cursors

JAVA interacts poorly with anything other than Windows standard pointers. Before running SPOT under MS-Windows, set the cursor type to 'Windows standard' or 'none'. Do this by opening the Control Panel and clicking on 'Mouse', select the 'pointers' tab, and then select 'Windows standard' or 'none'.

#### 3.3 *LINUX: RedHat 6.0, 6.1*

SPOT on Linux does not yet run in a stable fashion. **The Java Runtime included with this SPOT release requires at least a glibc-2.1.2 based system with a recent 2.2.x kernel.** It will not run with glibc-2.0 or glibc-2.1[.1] Our Linux development system is a Pentium II (266 MHz), with 128 MB of memory, running RedHat 6.0, upgraded with glibc-2.1.2 (Linux kernel version 2.2.5), and fvwm2. We have also installed and run it on a RedHat 6.1 system.

We have seen problems with windows not redrawing correctly. Resizing them usually fixes the problem. If you are running SPOT on Linux please let us know which Linux/window manager configuration you are using, and whether or not you experience problems.

The 'drag-and-drop' features that SPOT uses in the constraints editing and duplication tools do not work under Linux. Buttons are provided in both of these tools that allow you to select AORs and targets so that the full functionality of these tools is available, regardless of which operating system you are using.

We get many "font not found" messages for "dingbats" fonts. This problem is mentioned on the Linux Java website: <http://www.blackdown.org/java-linux/jdk1.2-status/known-bugs.html> where they recommend obtaining the URW fonts. This is the recipe we used to fix the problem:

a. From website

<http://www.gimp.org/fonts.html> (follow link "here") to <http://www.gimp.org/urw-fonts.tar.gz> and download the URW fonts.

b. Unpack the URW fonts into the appropriate directory. On our Redhat 6.0 system, the fonts are in `/usr/X11R6/lib/X11/fonts` and we put the URW fonts into `/usr/X11R6/lib/X11/fonts/URW`.

c. Edit file `/usr/X11R6/lib/X11/fonts/URW/fonts.dir`

Find the line with "Zapf Dingbats", duplicate that line, and in the second copy change "Zapf Dingbats" to "dingbats".

Find the line with "Symbol", duplicate that line, and in the second copy change "Symbol" to "standard symbols I".

Increase the number on the first line by two, to maintain the proper count of the number of fonts in the file.

d. Tell the font server about the directory:

```
xset fp+ /usr/X11R6/lib/X11/fonts/URW
xset fp rehash
```

e. In an attempt to get the font recognized at boot time, and avoid the need for the xset commands, we edited file `/etc/X11/fs/config` and added directory `/usr/X11R6/lib/X11/fonts/URW` to the catalogue list.

## **4 Performance Issues and Troubleshooting**

In this section we discuss general performance issues that we have discovered. JAVA does run on multiple hardware and software platforms, but each combination of hardware and software has issues.

### **4.1 RAM Memory**

If you are using a computer with 64 MB of memory the performance of SPOT may degrade if you run other memory intensive programs concurrently, e.g. IRSKY or IDL.

### **4.2 Window Managers**

#### **4.2.1 Window Redraw Problems**

Some window managers on UNIX systems (olvwm and lvwm are known) do not support JAVA in a standard way. If you are running one of these window managers you may see buttons disappear or not be redrawn correctly and the 'drag-and-drop' features in SPOT will not work. SPOT may completely grind to a halt due to windowing problems with one of these old window managers. JAVA is much better supported under Solaris with CDE and MOTIF. All of our Solaris testing has been carried out using CDE.

We have seen similar irregularities with windows not redrawing properly running under LINUX with fvwm2. Resizing the window usually makes the screen refresh correctly but we recommend saving your AORs frequently if you experience these problems so that you don't lose your work if you encounter a serious windows manager problem.

On UNIX workstations, on rare occasions, we have also seen the main screen come up blank, instead of being drawn correctly within a few seconds. It eventually shows up, or resizing the window fixes it.

On all platforms we have occasionally seen pull-down menus on the main panel that don't disappear when they should. For Windows PCs, this seems to be more prevalent under Windows 98. The workaround for this is to open one of the sub-menus from the pull-down or resize the window. This takes care of the redraw problem.

#### **4.2.2 UNIX – CDE Settings**

When using CDE on a Sun Workstation you need to turn off the 'Raise Window When Made Active' feature. Otherwise the dialogs and message windows continually disappear under the main screen. To turn off this feature go to the Style Manager in the CDE tool bar, select the Window icon, and turn off 'Raise Window When Made Active'.

### 4.2.3 Solaris-JAVA Memory Management

After repeated intensive calculations of time estimates, visibility windows, etc., we have seen ‘out of memory’ errors on Solaris systems running CDE, even on a system with 128 MB of memory. The problem is that the current version of JAVA does poor memory management under Solaris. It is not doing the ‘garbage collection’ properly. SPOT will start to slow down and will then just stop if this problem occurs. Letting it sit for 15 minutes usually clears it, but this is extremely annoying. We recommend saving your AORs often so that you don’t lose work if this problem occurs. We anticipate that the next release of JAVA, hopefully later this year, will solve this problem.

### 4.3 *Running Multiple Copies of SPOT*

If you run two or more copies of SPOT eventually one or both will hang without warning. We do not recommend running multiple copies but if you feel you need to then save your work often.

### 4.4 *No Server Access from SPOT*

SPOT works as a client-server application. You have downloaded SPOT, the client, onto your local computer. The server software, AIRE, that provides observing time estimates is located at the SSC and SPOT accesses it via the internet. SPOT also accesses servers to calculate visibility windows and sky background estimates. If your computer is not connected to the internet or one of our servers is down, SPOT will display the NET-DOWN symbol at the bottom of the main SPOT screen. When you see the NET-DOWN symbol please email the Help Desk at [sirtf@ipac.caltech.edu](mailto:sirtf@ipac.caltech.edu) as one of our servers may be down.

In rare instances we have encountered Windows 95 and Windows NT PCs that would never connect to the servers, even though they were functioning and the internet connection was fine. The repair of this problem is generally simple.

**For Windows 95**, if you NEVER see the NET-UP symbol, this is probably a Microsoft TCP/IP problem. You need to download and install the Winsock 2.0 software from Microsoft. It is available at:

[http://www.microsoft.com/windows95/downloads/contents/wuadmintools/s\\_wunetworkingtools/w95sockets2/](http://www.microsoft.com/windows95/downloads/contents/wuadmintools/s_wunetworkingtools/w95sockets2/)

**For Windows NT**, if you NEVER see the NET-UP symbol, this is a similar problem to the one above but it has a different fix. Follow the steps below.



a) Using a text editor, open the spot.log file located in  
C:\Winnt\Profiles\{user ID}\spot directory.

b) Look for the following error:

```
java.net.SocketException: setsockopt() TCP_NODELAY
```

If seen, then you probably are running WinNT4.0 Service Pack 6 and need to download Service Pack 6a update. Verify that your machine is running Service Pack 6, and if so, download the update as follows:

c) Go to <http://www.microsoft.com/ntworkstation/>

d) Select "Latest Updates in Service Pack 6" and follow the instructions. This should result in the NET-UP symbol on the SPOT main window.

The only other instance of a permanently NET-DOWN situation we have seen is for a **Windows PC that was behind a very strong firewall** that apparently was stripping off the JAVA objects in the data stream when they were sent to our servers. We can't fix this situation.

## 5 Known Bugs/Issues

The current list of known bugs and issues is updated regularly and kept on the Proposal Kit web page from which you downloaded this software. We include here the list of known bugs, and suggested work-arounds if applicable, that we were aware of when the software was released. When you find what you think is a bug, please check the known bugs list and the appropriate section of the User's Guide to understand what the software is doing. If you have found a real bug then please do let us know by sending email to the Help Desk at [sirtf@ipac.caltech.edu](mailto:sirtf@ipac.caltech.edu).

1. 4/28/2000 For moving targets you are unable to enter flux density estimates. When you click the flux density button from one of the AOT entry forms, you will get a message saying it isn't implemented.

Impact: Minor -- SPOT isn't using the flux density yet for any calculations.

Workaround: You can enter flux densities into the comment field in the AOT if you wish to save this information with the AOR.

2. 4/28/2000 Moving Cluster – Observe Offsets Only Function not yet implemented in time estimates. In this version of SPOT you can check the 'observe offsets only' box but this function is not yet implemented in the AIRE server that provides the observing time estimates.

Impact: Major, if you are doing long observations on a small number of positions.

Workaround: To obtain an accurate time estimate for the 'offsets only' observation, observers should calculate a time estimate with one less offset in the moving cluster target than they actually plan to observe. You will then need to modify the target from within the AOT form to add in the final offset and edit the time estimate in the AOR file before submitting it to the SSC. See the SPOT User's Guide for more detailed instructions on how to submit an 'observe offsets only' moving cluster observation.

3. 4/28/2000 MIPS Scan 160um data warnings: SPOT currently warns you that 160um FOV filling is uncertain for FAST scan rate scan legs 3 degrees or longer. It should only give you this warning for scan legs 5 degrees or longer. See the MIPS chapter in the SIRTf Observer's Manual.

Impact: Minor

4. 4/28/2000 NED name resolution is available from the moving target entry dialogs. This is, of course, never going to be successful since solar system objects (except when mistaken for high redshift galaxies) are not in the NASA/IPAC Extragalactic Database.

Impact: Minor

5. 4/28/2000 Visibility for Moving Clusters: If you enter the primary position for a moving cluster, and then click the Visibility/Orientation button to determine visibility windows before you have entered any offsets into the moving cluster dialog, SPOT will give you multiple error messages. Ignore the “Server Problem: No Target in visibility calculation” message. Just enter at least one pair of offsets, which makes the Moving Cluster a valid target, and then click the visibility button.

Impact: Minor

6. 4/28/2000 SPOT dies if no AOR is selected and one of the AOR buttons (delete, modify, duplicate) is clicked. In almost all cases this is impossible to do because SPOT doesn't activate the AOR buttons unless an AOR in the main table is selected. The only time we have seen this bug is if you read in an AOR file and select the Recalculate Time Estimates function. When this function finishes executing an AOR isn't selected but the AOR buttons are active.

Impact: Minor

Workaround: Select an AOR before clicking any of the AOR buttons.

7. 4/28/2000 Deleted constraints do not completely disappear from the constraint editor dialog. If you delete AORs with grouping constraints, SPOT will delete the constraints if all the AORs included are deleted. If you open the constraints editor dialog, the deleted constraint name will still show but without the little knob to the left. If you click 'apply' the name disappears. These constraints really are deleted. They don't get written out with the AOR file. This is just a window display problem. SPOT is properly handling the deleted constraints.

Impact: Minor

8. 4/28/2000 IRS PCRS Peak-up: No 'Extended Source' option is allowed for PCRS Peak-up. This option is only valid for IRS Peak-up. Do not use it for PCRS Peak-up.

Impact: Minor

9. 4/28/2000 MIPS Scan Leg turn-around times are shorter than they should be by a few seconds. The current version of the slew model does not take into account required 'frame changes' required in the commanding of this AOT. This results in the turn-around times for the scan legs being a few seconds short.

Impact: Minor

10. 4/28/2000 Reminder 'disk icon' that warns you to save your AORs is not always properly activated. For first generation AOTs if you make a modification to an AOT, the 'disk' icon will generally appear at the bottom of the main window to remind you to save your AORs. If you modify a flux density in any AOT or if you create/modify second generation AOTs (MIPS SED, MIPS Total Power Mode, IRS Spectral Mapping) the icon doesn't appear.

Impact: Major, if you rely on this disk icon to remind you to save AORs.

Workaround: Save your AORs frequently, and always save them before you shut down SPOT.

11. 4/28/2000 Help window formatting problem seen on Windows 95 platform. On one computer the text in the help window was formatted in an unreadable fashion. We can't replicate this problem on other platforms and it was intermittent on the computer where it appeared. Closing and reopening the help fixed it.

Impact: Minor

12. 4/28/2000 MIPS Scan Map160um Data Required Flag. The tool tip should say that the meaning of this flag is "Schedule the observation when the telescope temperature is  $\leq 5.5\text{K}$ ." The 160um data are always taken regardless of whether the flag is on or off. This flag is used to indicate that 160um data are a crucial part of this observation.

Impact: Minor

## 6 Reporting Bugs

Each time you run SPOT it creates a file called ‘spot.log’. If you encounter a bug email the Help Desk at [sirtf@ipac.caltech.edu](mailto:sirtf@ipac.caltech.edu), report what happens, and please include the spot.log file. The spot.log file is overwritten each time you run the program. It can be found in the default directory created when you install the software. The default directory is:

UNIX/LINUX	~/spot
Windows 95,98	c:\spot
Windows NT	c:\Winnt\Profiles\{username}\spot